

### **Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

### **Listing of Claims**

Claims 1-41 (Cancelled).

42. (New) A method comprising steps of proactively monitoring for an occurrence of an event associated with operation of a distributed data storage system, characterizing the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, adjusting a parameter of the data storage system when the event is characterized as a usage event, and executing a diagnostic routine when the event is characterized as a non-usage event.

43. (New) The method of claim 42, wherein the event is characterized as a scheduling condition associated with an elapsed period of time irrespective of usage rate of said system over said elapsed period of time, and wherein the scheduling condition is characterized by the characterizing step as a non-usage event.

44. (New) The method of claim 42, wherein the event is characterized as a scheduling condition associated with completion of a predetermined number of I/O data accesses by said system, and wherein the scheduling condition is characterized by the characterizing step as a usage event.

45. (New) The method of claim 42, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, and wherein the scheduling condition is characterized by the characterizing step as a usage event.

46. (New) The method of claim 42, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, and wherein the scheduling condition is characterized by the characterizing step as a non-usage event.

47. (New) The method of claim 42, wherein the parameter adjusted during the adjusting step comprises an available amount of write cache memory for storing data to be written to storage media of said system.

48. (New) The method of claim 42, wherein the parameter adjusted during the adjusting step comprises an operational level of a disc array of said system.

49. (New) The method of claim 42, further comprising a step of copying a content of a first memory location to a second memory location in said system prior to the executing step.

50. (New) The method of claim 49, wherein the content of the first memory location comprises user data arranged in a first format, and wherein the copying step further comprises arranging said user data in a different second format in the second memory location.

51. (New) The method of claim 49, wherein the content of the first memory location comprises the diagnostic routine executed during the executing step.

52. (New) The method of claim 42, further comprising a step of performing a component adjustment in said system in response to a result obtained during the executing step.

53. (New) The method of claim 52, wherein the performing and executing steps are sequentially repeated to arrive at a final component adjustment in said system.

54. (New) The method of claim 42, further comprising steps of copying a content of a first memory location to a second memory location in said system prior to the executing step, and restoring the content to the first memory location after the executing step.

55. (New) A distributed data storage system comprising at least one processor having associated programming to proactively monitor for an occurrence of an event associated with operation of said system, to characterize the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said

system, to adjust a parameter of the data storage system when the event is characterized as a usage event, and to execute a diagnostic routine when the event is characterized as a non-usage event.

56. (New) The system of claim 55, wherein the event is characterized as a scheduling condition associated with an elapsed period of time irrespective of usage rate of said system over said elapsed period of time, and wherein the scheduling condition is characterized as a non-usage event.

57. (New) The system of claim 55, wherein the event is characterized as a scheduling condition associated with completion of a predetermined number of I/O data accesses by said system, and wherein the scheduling condition is characterized as a usage event.

58. (New) The system of claim 55, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, and wherein the scheduling condition is characterized as a usage event.

59. (New) The system of claim 55, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, and wherein the scheduling condition is characterized as a non-usage event.

60. (New) The system of claim 55, wherein the parameter adjusted during the adjusting step comprises an available amount of write cache memory for storing data to be written to storage media of said system.

61. (New) The system of claim 55, wherein the parameter adjusted by the at least one processor comprises an operational level of a disc array of said system.

62. (New) The system of claim 55, wherein the at least one processor further copies a content of a first memory location to a second memory location in said system prior to executing said diagnostic routine.

63. (New) The system of claim 55, wherein the content of the first memory location comprises user data arranged in a first format, and wherein the at least one processor further arranges said user data in a different second format in the second memory location.

64. (New) The system of claim 55, wherein the content of the first memory location comprises the diagnostic routine executed by said at least one processor processor.

65. (New) The system of claim 55, wherein a first processor from said at least one processor carries out said monitoring operation, and wherein a second processor from said at least one processor carries out said adjusting and executing operations.

66. (New) The system of claim 55, wherein the at least one processor further performs a component adjustment in said system in response to a result obtained during the execution of the diagnostic routine.

67. (New) The system of claim 66, wherein the performing and executing operations are sequentially repeated to arrive at a final component adjustment in said system.

68. (New) The system of claim 55, wherein the at least one processor further copies a content of a first memory location to a second memory location in said system prior to the execution of the diagnostic routine, and restores the content to the first memory location after the execution of the diagnostic routine.

69. (New) An apparatus comprising a distributed data storage system comprising a host system, a storage controller, a plurality of data storage devices, and first means for proactively monitoring for an occurrence of an event associated with operation of a distributed data storage system, for characterizing the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, for adjusting a parameter of the data storage system when the event is characterized as a usage event, and for executing a diagnostic routine when the event is characterized as a non-usage event.

70. (New) The apparatus of claim 69, wherein the first means comprises at least one processor with associated programming code in a memory location.